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September 13, 2000

SVP-00-144

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Quad Cities Nuclear Power Station, Unit 2
Facility Operating License No. DPR-30
NRC Docket No. 50-265

Subject: Supplemental Licensee Event Report Concerning Primary Coolant Isolation and Reactor Trip due to Adjustment of Incorrect Main Steam Line High Flow Switch during Calibration

Enclosed is Licensee Event Report (LER) 265/00-006, Revision 01, for Quad Cities Nuclear Power Station.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(iv). The licensee shall report any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature.

We are committing to the following actions:

Maintenance work activities will be reviewed for possible methods to bypass Group 1 Primary Coolant Isolation trips during testing.

Instrument Maintenance procedures with the potential to cause a unit trip or derating will be divisionalized.

Any other actions described in the submittal represent intended or planned actions by Commonwealth Edison (ComEd) Company. They are described for the NRC's information and are not regulatory commitments.

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Should you have any questions concerning this letter, please contact Mr. C.C. Peterson at (309) 654-2241, extension 3609.

Respectfully,

George P. Barnes for

Joel P. Dimmette, Jr.
Site Vice President
Quad Cities Nuclear Power Station

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

bcc: Project Manager – NRR
Office of Nuclear Facility Safety, - IDNS
Senior Reactor Analyst – IDNS
Resident Inspector - IDNS
Manager of Energy Practice – Winston and Strawn
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NSRB Site Coordinator – Quad Cities Nuclear Power Station
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SVP Letter File

NRC FORM 366 (6-1998)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001
LICENSEE EVENT REPORT (LER)		Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the information and Records Management Branch (t-6 f33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office Of Management And Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

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TITLE (4)
Primary Coolant Isolation and Reactor Trip due to Adjustment of Incorrect Main Steam Line High Flow Switch during Calibration

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									N/A	
05	05	2000	2000	006	01	09	13	2000	FACILITY NAME N/A	DOCKET NUMBER

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)							
			20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)
POWER LEVEL (10)	100%		20.2203(a)(i)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
			20.2203(a)(2)(i))		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
			20.2203(a)(2)(ii)		20.2203(a)(4)	X	50.73(a)(2)(iv)		OTHER
			20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Charles Peterson, Regulatory Assurance Manager	(309) 654-2241 ext 3609

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i. e., approximately 15 single-spaced typewritten lines) (16)

On May 5, 2000, at 0940 hours, a Group I Primary Coolant isolation and a reactor trip were received on Unit 2 during calibration of Main Steam Line High Flow switches. The individual performing the calibration adjusted a switch other than the one that was isolated and prepared for calibration.

The root causes of this event were inadequate individual performance on the part of the Instrument Maintenance Technician in the field, failure to adequately enforce management expectations concerning established human performance initiatives, insufficient barriers considering the risk associated with testing Group I isolation instruments, and a lack of oversight and communication. Additionally, previous corrective actions were inadequate.

The safety significance of this event was minimal. No mitigating equipment was degraded, and all Emergency Core Cooling Systems were operable throughout the event

Several immediate corrective actions were taken commensurate with the seriousness of the event. Corrective actions that remain to be taken include divisionalization of Instrument Maintenance (IM) procedures with the potential to cause a unit trip or derating.

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 MWt rated core thermal power

Energy Industry Identification System (EIIS) Codes are identified in the text as [XX] and are obtained from IEEE Standard 805-1984, IEEE Recommended Practice for System Identification in Nuclear Power Plants and Related Facilities.

EVENT IDENTIFICATION:

Primary Coolant Isolation and Reactor Trip due to Adjustment of Incorrect Main Steam Line High Flow Switch during Calibration

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2	Event Date: May 5, 2000	Event Time: 0940 hours
Reactor Mode: 1	Mode Name: Power Operation	Power Level: 100%

Power Operation (1) - Mode switch in the RUN position with average reactor coolant temperature at any temperature.

B. DESCRIPTION OF EVENT:

At shortly after 0800 hours on May 5, 2000, an Instrument Maintenance (IM) B-Technician (IMB) and an IM Technician (IMT) began to perform QCIS 0200-17, "Main Steam Line High Flow Calibration and Functional Test." QCIS 0200-17 involves the calibration of sixteen differential pressure indication switches [PDS] that provide a Group I Primary Coolant isolation [JM] signal under a main steam line high flow condition. The calibration involved the use of a test rig to apply pressure to each instrument after it had been isolated. The instruments were tested alphabetically as arranged on the instrument rack to minimize time in a dose area, rather than all of the instruments on one trip system followed by all of the instruments on the other trip system. The IMT was in the plant at the instruments and the IMB was stationed in the control room to monitor alarms. The ring-back feature of the alarms, which provides a fast flash each time a trip is received and a slow flash each time the trip resets, was relied on to verify that the trips occurred, rather than acknowledging and clearing each alarm.

At approximately 0920 hours, after the first 11 instruments were tested, the 2-0261-2M instrument, which provides a signal to the "B" Group I isolation trip system, was to be tested. The test rig was attached to the instrument, the instrument was tested, and it was determined that the instrument needed to be adjusted. The IMT turned from the instrument rack to get a tool, then turned back to the instrument rack and proceeded to adjust the 2-0261-2J instrument, which provides a signal to the "A" Group I isolation trip system, without realizing that it was not the 2-0261-2M instrument. The 2-0261-2J instrument was adjusted multiple times with test pressurization being performed on the 2-0261-2M instrument. At 0940 hours on May 5, 2000, with the 2-0261-2M instrument pressurized by the test rig and the 2-0261-2J trip setpoint lowered into the normal operating band, the logic was completed for a full Group I isolation, resulting in a trip of the Unit 2 reactor [JC]. Operations personnel instructed the IM technicians to stop all further action and responded to place the plant in a safe condition. All control rods inserted. The Unit 2 Emergency Diesel Generator (EDG) [EK] received a spurious automatic start signal during the automatic transfer of Auxiliary Power. Also, during the transient reactor water level reached the low level setpoint, which was expected for this event, and all Group II Primary Containment isolations occurred as expected. An Emergency Event Notification in accordance with 10 CFR 50.72(b)(2) was made at 1240 hours on May 5, 2000.

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TEXT *(If more space is required, use additional copies of NRC Form 366A) (17)*

C. CAUSE OF EVENT:

The root causes of the inadvertent actuation of the Main Steam Line High Flow Group I isolation are listed below:

- Individual performance by the IMT in the field was inadequate.
- Management expectations to follow established human performance initiatives were not adequately enforced at the field work level.
- Barriers did not exist or were not sufficiently strict to prudently consider the risk associated with testing Group I isolation instruments.
- There was a lack of oversight of the test evolution by Operations and a lack of communication between Operations and Maintenance.

This event was also caused by ineffective corrective actions from previous non-reportable station events involving maintenance work practices and configuration errors. The corrective actions tended to focus too narrowly on briefings and individual counseling.

As discussed in LER 254/99-002, revision 1, the root cause of the auto-start of the EDG is less than adequate design of the auto-start logic. The short time gap that the feed breakers from the Unit Auxiliary Transformer 11 and the Reserve Auxiliary Transformer 12 are open results in a signal to the auto-start logic. The feed breaker open gap is typically of such a short duration that the start signal does not seal in. However, in response to this event the logic did seal in and the EDG auto-started.

D. SAFETY ANALYSIS

The safety significance of this event was minimal. Although the error did cause a reactor trip, which challenged the unit's safety systems, no mitigating equipment was degraded and plant safety equipment operated as designed. The unit was shut down using normal operating equipment, and all Emergency Core Cooling Systems were operable throughout the event.

E. CORRECTIVE ACTIONS:

Corrective Actions Completed:

Appropriate actions were taken concerning the individual performance of the IMT in the field.

A brief was conducted with each IM shift to discuss the event findings, stressing the human performance aspect of this event.

IM personnel have completed a one-on-one dynamic learning activity that demonstrated the IM Superintendent expectations for self-check, communication, procedure use and adherence, positive methods to be employed to positively identify proper component/equipment, and annunciator ring-back use.

Additional field personnel have been assigned during surveillances which have the potential for affecting production.

Critical IM predefines have been identified and work planning factors added to the predefines to require additional oversight until the divisionalization of appropriate IM procedures is complete.

Interim measures were developed requiring the IMs to inform the Nuclear Station Operator of expected alarms on the trip system being tested and requiring similar notification if/when a new trip system is tested.

The expectation that Operations must communicate with IMs during surveillance activities, be aware when IMs are switching divisions during testing, and stop IM surveillances if they are not communicating these changes was reinforced with the Operations department.

A Maintenance Memo, which has since been proceduralized, was issued clarifying the requirement to flag equipment in the field that is being tested.

An individual has been identified who is accountable for the quality of all Maintenance investigations and for applying the criteria of the corrective action program.

Training has been provided to Maintenance personnel on human performance fundamentals and verification practices through laboratory exercises.

QCIP 0100-13, "Instrument Maintenance Department Maintenance Alteration Procedure," has been revised to meet the requirements of AD-AA-104-103, "Verification Practices."

Corrective Actions to be Completed:

Maintenance work activities will be reviewed for possible methods to bypass Group 1 Primary Coolant Isolation trips during testing.

IM procedures with the potential to cause a unit trip or derating will be divisionalized.

As discussed in LER 254/99-002, revision 1, corrective actions associated with the EDG auto-start include installation of a time delay to the auto-start relay for Bus 14 breaker open logic.

F. PREVIOUS OCCURRENCES:

Although there were no LERs identified in the last two years involving maintenance work practices and configuration control errors, there were such events in the station corrective action program. Therefore, lack of adequate corrective actions was identified as a cause of this event.

G. COMPONENT FAILURE DATA:

There were no component failures associated with this event.